BOBBY JINDAL
GOVERNOR

HAROLD LEGGETT, PH.D.
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No.:

Agency Interest No. 1376
Activity No.: PER20070015

Mr. Richard A. Igercich
Refinery Manager, Chalmette Refinery
Chalmette Refining, L.L.C.
Post Office Box 1007
Chalmette, Louisiana 70044

RE: PSD-LA-199(M-7), Chalmette Refinery, Chalmette Refining, L.L.C., Chalmette, St. Bernard Parish, Louisiana

Dear Mr. Igercich:

Enclosed is your Prevention of Significant Deterioration (PSD) Permit No. PSD-LA-199(M-7). Should you have any questions concerning the permit, contact Syed Quadri at 225-219-3123.

Sincerely,

Cheryl Sonnier Nolan
Assistant Secretary

_____
Date

SGQ
c: US EPA Region VI

PSD-LA-199(M-7), AI NO. 1376

AUTHORIZATION TO OPERATE AN EXISTING FACILITY PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE, LAC 33:III.509

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Chalmette Refining, L.L.C.
Post Office Box 1007
Chalmette, Louisiana 70044

is authorized to operate the Louisiana Refining Division, a refinery at

500 West St. Bernard Highway
Chalmette
St. Bernard Parish, Louisiana

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

Signed this _____ day of _____, 2008.

Cheryl Sonnier Nolan
Assistant Secretary
Office of Environmental Services

BRIEFING SHEET

CHALMETTE REFINERY
AGENCY INTEREST NO. 1376
CHALMETTE REFINING, L.L.C.
CHALMETTE, ST. BERNARD PARISH, LOUISIANA
PSD-LA-199(M-7)

PURPOSE

To obtain a modified PSD permit for the Chalmette Refinery at Chalmette.

RECOMMENDATION

Approval of the proposed permit.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services.

PROJECT DESCRIPTION

Chalmette Refining, L.L.C. is a petroleum refinery located along the left descending bank of the Mississippi River at mile marker 89 above Head-of-Passes at Chalmette, St. Bernard Parish, Louisiana. The refinery is an integrated crude operation (high conversion) which includes crude distillation, catalytic reforming, fluid catalytic cracking (FCC), hydrocracking, Hydrogen Fluoride (HF) alkylation, delayed coking, and aromatics processing units. The refinery's product capabilities include gasoline, diesel, benzene/toluene/xylene (BTX), distillates, and elemental sulfur, as well as by products such as petroleum coke and liquefied petroleum gases (LPGs).

The facility conducted an Optimization Study on the SRU Thox as per the requirements of U.S. EPA Consent Decree No. 05-4662 B(i), a New Source Review (NSR) Global Settlement between U.S. EPA and State of Louisiana verses Chalmette Refining, L.L.C. filed on April 26, 2006. The study included 1) a detailed evaluation of the Sulfur Recovery Plant design, capacity, operating parameters and efficiency including catalytic activity and material balance; 2) a thorough review of each critical piece of process equipment and instrumentation within the Claus Trains; 3) establishment of baseline data through testing and measurement of key parameters through out the Claus Trains; 4) establishment of the thermodynamics process model of the Claus trains; and 5) verification through testing and analysis of CEMs data.

During the Optimization Study it was determined that the criteria pollutant emissions from the SRU Thox (F-8003/8053, Emission Point 46) were higher than previously calculated. There was no modification (new equipment or change in the method of operation) undertaken at the SRU Thox. These changes were due to revised calculations (actual operating temperature higher than the estimated temperature) and do not results in actual emissions increase to the atmosphere. Therefore, PSD review is not required. The National Ambient Air Quality Standards (NAAQS) will not be exceeded due to the higher emission numbers from the Optimization Study, because the previous modeling was conducted under the Administrative Order of Consent (AOC) which

had higher emissions limits than the current permitted emissions. Also, there is no change in the existing Best Available Control Technology (BACT) analysis. The facility is incorporating these emission changes due to the Optimization Study into Permit No. 3023-V1.

The change in emissions from the SRU based on the Optimization Study, Post SPGR Project, and the calculation methodology is as follows:

Pollutant	Before*	After	Change
PM_{10}	1.63	1.84	+ 0.21
SO_2	58.75	65.73	+ 6.98
NO_X	55.77	60.04	+ 4.27
CO	203.73	328.97	+ 125.24
VOC	0.13	0.16	+ 0.03

* Permitted emissions are being used as the Part 70 Permit No. 3023-V0 was issued in January 2007 which included the ULSD and SPGR Projects. No sufficient data to use actual emissions

Chalmette Refinery proposes the following additional changes:

The facility will also incorporate startup/shutdown (SU/SD) emissions for Flares No. 1 & 2 and emissions from Flare Gas Management into Permit No. 3016-V0, as per the requirements of the Consent Decree No. 05-4662 B(i) under "Good Air Pollution Control Practices" for No. 1 & 2 Flares, and miscellaneous flaring operations. The SU/SD emissions are not subject to New Source Review as they are existing emissions and no new modifications (new source or change in the method of operation) are being undertaken at this time. The SU/SD emissions were reported in accordance with LAC 33:III.918 and 919. Permitting SU/SD emissions will be beneficial to air quality and will greatly assist in air quality planning purposes by requiring that the SU/SD emissions be clearly identified, quantified, and limited where necessary through out the facility.

The SU/SD activities, when the excess refinery fuel gas is routed to the No. 1 Flare, are separated into the following categories: a) ALKY Unit shutdown during which large amount of process gas in excess of the Flare Gas Management capacity; b) Flare Gas Management maintenance when any one of the three compressors is shut down for repairs; c) When the complete Flare Gas Management system (all three compressors) is shutdown for cleanup and repairs; and d) When safety relief valves are opened for maintenance and safety reasons to balance pressure.

Under PSD regulations, a Best Available Control Technology (BACT) analysis is required for the emissions units or equipment that is physically modified or is new and emits pollutants that

increase above the significance levels. The increase in SO_2, NOx, CO, and VOC emissions is significant but the changes are not due to any modifications, only incorporation of existing SU/SD emissions from the No. 1 & 2 Flares. Therefore, BACT analysis is not required.

Emissions are also being updated for three existing Boilers Nos. 402, 9, and 10 (Emission Points 27, 66, and 70) based on the installation of Ultra-Low NOx Burners. This project was undertaken as per the requirements of the Consent Decree referenced above. The facility also installed continuous emission monitoring system (CEMS) on Boiler 402. NOx were emissions reduced by approximately 200 tons per year due to this project.

TYPE OF REVIEW

The proposed permit was reviewed in accordance with PSD regulations for CO emissions and it was determined that the increase is not due to any modification (new equipment or change in the method of operation).

BEST AVAILABLE CONTROL TECHNOLOGY

BACT analysis is not required for any criteria pollutant or any equipment at this time.

AIR QUALITY IMPACT ANALYSIS

PSD regulations require an analysis of existing air quality for those pollutants emitted in significant amounts from a proposed modification at the facility.

As explained earlier the initial modeling was conducted with the AOC permitted emissions which are greater than the current overall emissions. However, the facility conducted dispersion screening with the current emissions which included the emissions increases due to the SRU Thox Optimization Study and the SU/SD for the No. 1 and 2 Flares. The screening results demonstrated that the modeled impacts do not violate the National Ambient Air Quality Standards (NAAQS) and PSD Increment for all the criteria pollutants.

ADDITIONAL IMPACTS

Earlier, the air quality analysis indicated that post project concentrations of the criteria pollutants were below the PSD ambient significance levels; therefore, there was no significant impact on area soils, vegetation, or visibility. Current overall emissions are lower than the overall emissions used for the air quality analysis earlier. Therefore, it can be safely determined that there is no significant impact on area soils, vegetation, or visibility.

BRIEFING SHEET

CHALMETTE REFINERY
AGENCY INTEREST NO. 1376
CHALMETTE REFINING, L.L.C.
CHALMETTE, ST. BERNARD PARISH, LOUISIANA
PSD-LA-199(M-7)

PROCESSING TIME

Application Dated:	December 18, 2007
Application Updated:	-
Effective Completeness:	May 7, 2008

PUBLIC NOTICE

A notice requesting public comment on the permit was published in The Advocate, Baton Rouge, Louisiana and The St. Bernard Voice, Arabi, Louisiana, on May **, 2008. Copies of the public notice were mailed out to individuals on the mailing list maintained by Office of Environmental Services on May **, 2008. The proposed permit was sent to EPA via e-mail on May **, 2008. Comments received from the general public, organizations and from EPA were considered prior to the issuance of this permit.

PRELIMINARY DETERMINATION SUMMARY

CHALMETTE REFINERY
AGENCY INTEREST NO. 1376
CHALMETTE REFINING, L.L.C.
CHALMETTE, ST. BERNARD PARISH, LOUISIANA
PSD-LA-199(M-7), MAY 7, 2008

I. APPLICANT

Chalmette Refining, L.L.C.
Post Office Box 1007
Chalmette, Louisiana 70044

II. LOCATION

The Chalmette Refining L.L.C. (Chalmette Refinery) is located at 500 West St. Bernard Highway, Chalmette, Louisiana 70044; approximate UTM coordinates are 213.03 kilometers East and 3314.90 kilometers North, Zone 15.

III. PROJECT DESCRIPTION

Chalmette Refinery proposes the following changes:

The facility conducted an Optimization Study on the SRU Thox as per the requirements of U.S. EPA Consent Decree No. 05-4662 B(i), a New Source Review (NSR) Global Settlement between U.S. EPA and State of Louisiana verses Chalmette Refining, LLC filed on April 26, 2006. The study included 1) a detailed evaluation of the Sulfur Recovery Plant design, capacity, operating parameters and efficiency including catalytic activity and material balance; 2) a thorough review of each critical pieces of process equipment and instrumentation within the Claus Trains; 3) establishment of baseline data through testing and measurement of key parameters through out the Claus Trains; 4) establishment of the thermodynamics process model of the Clause Trains; and 5) verification through testing and analysis of CEMs data.

During the Optimization Study it was determined that criteria pollutant emissions from the SRU Thox (F-8003/8053, Emission Point 46) were higher than previously calculated. There was no modification (new equipment or change in the method of operation) undertaken at the SRU Thox. These changes result only from a revision of the calculation method and do not result in an actual increase in emissions to the atmosphere. The National Ambient Air Quality Standards (NAAQS) will not be exceeded due to the increase in emissions from the Optimization Study, because the previous modeling was conducted under the Amended Administrative Order of Consent (AOC) dated May 24, 2006, which has higher emissions limits than the current permitted emissions. Also, there is no change in the existing Best Available Control Technology (BACT) analysis.

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CHALMETTE REFINING, L.L.C.
CHALMETTE, ST. BERNARD PARISH, LOUISIANA
PSD-LA-199(M-7), MAY 7, 2008

The change in emissions from the SRU based on the Optimization Study, Post SPGR Project, and the calculation methodology is as follows:

Pollutant	Before*	After	Change
PM_{10}	1.63	1.84	+ 0.21
SO_2	58.75	65.73	+ 6.98
NO_X	55.77	60.04	+ 4.27
CO	203.73	328.97	+ 125.24
VOC	0.13	0.16	+ 0.03

* Permitted emissions are being used as the Part 70 permits were issued in January 2007 which included the ULSD and SPGR Projects.

The facility will also incorporate startup/shutdown (SU/SD) emissions for Flares No. 1 & 2 and emissions from Flare Gas Management (FGM) into Permit No. 3016-V0, as per the requirements of U.S. EPA Consent Decree No. 05-4662 B(i) under "Good Air Pollution Control Practices" for No. 1 & 2 Flares, and miscellaneous flaring operations (See Section V.I, pp 37; and V.Q, pp 80 of the Consent Decree). The overall emissions increase associated with the SU/SD, FGM and the Consent Decree are not subject to New Source Review as they are existing emissions and not due to any modification (new source or change in method of operation) and are not triggering any new regulations. The SU/SD emissions were always included in the annual emissions submittal to Louisiana Department of Environmental Quality (LDEQ) in accordance with LAC 33:III.919, Emission Inventory.

The SU/SD activities, when the excess refinery fuel gas is routed to the No. Flare, are separated into the following categories: a)ALKY Unit shutdown during which large amount of process gas in excess of the FGM capacity; b) FGM maintenance when any on of the three compressors is shut down for repairs; c) When the complete FGM system (all three compressors) is shutdown for cleanup and repairs; and d) When safety relief valves are opened for maintenance and safety reasons to balance pressure. A specific condition has been added for monitoring, recordkeeping and limiting SU/SD emissions to show compliance in the Part 70 Permit No. 3016-V1.

PRELIMINARY DETERMINATION SUMMARY

CHALMETTE REFINERY
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The table below shows the comparison between modeled current permitted emissions limits with the amended Administrative Order of Consent (AOC) emission limits for the facility in tons per year:

Pollutant	AOC Limits	Initial Permit Limits (V0)	Modeled Current Permitted Limits	Flare No. 1 & 2 SU/SD Emissions
PM_{10}	307.30	241.10	230.79	7.52
SO_2	2817.20	509.50	506.79	1307.61
NO_X	4229.09	3205.60	2631.46	25.29
CO	2640.10	2053.60	2424.63	137.61
VOC	4756.10	4127.40	2775.77	40.41

Note: Current permitted limits include all the interim updates, other changes if any and the changes proposed in the Optimization Study and the inclusion of SU/SD emissions

The facility was required to conduct an air quality analysis of the ambient impacts on NAAQS. A dispersion modeling was conducted with the AOC permitted limits which indicated that there was no exceedance of NAAQS for any criteria pollutants. The table above clearly shows that the sum of modeled current permitted emissions limits and the Flare No. 1 & 2 SU/SD emissions (yearly maximum) is lower than the AOC permitted limits. Therefore, it can be safely determined that the NAAQS for any criteria pollutant will not be exceeded. Furthermore, the facility conducted dispersion modeling for NOx and CO and the results indicated that there is no exceedance of NAAQS as shown in the table below.

Pollutant	Average Period	Concentration (ug/m^3)			
		Modeled Impact	Background	Total	NAAQS
NO2	Annual	28.7	16.9	45.6	100
CO	1-Hour	11,876	4,164	16,040	40,000
	8-Hour	3,584	2,528	6,112	10,000

Since the facility is not undertaking any modification (change of method of operation); therefore, there is no change in the current BACT analysis for CO (PSD Permit No. PSD-LA-199(M-6) dated December 11, 2007) as shown below:

Chalmette Refinery proposes "Good Combustion Practices" along with "Full Burn-Mode Operation" as BACT to control CO emissions from the FCCU in conjunction with the Thermal De-NOx. The CO emissions will be limited to 500 ppmv at 0% oxygen on an hourly basis and 300 ppmv at 0% oxygen on a 365-day rolling average. During the startup/shutdown and malfunction of the FCCU the permittee shall comply with the

requirements of the Consent Decree under Civil Action No. 05-4662 Section "B", Paragraph 29, between U.S. EPA and Chalmette Refining, L.L.C and the Intervener State of Louisiana.

IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for proposed major modifications requires review under PSD regulations, LAC 33:III.509. PSD permit reviews of proposed new or modified major stationary sources require the following analyses:

A. A determination of the Best Available Control Technology (BACT);

B. Analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;

C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);

D. An analysis of the PSD increment consumption;

E. An analysis of the source related growth impacts;

F. An analysis of source related impacts on soils, vegetation, and visibility;

G. A Class I Area impact analysis; and

H. An analysis of the impact of toxic compound emissions.

A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a new major source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes.

The emissions change is not due to any modification. New BACT analysis is not required for any criteria pollutants.

PRELIMINARY DETERMINATION SUMMARY

CHALMETTE REFINERY
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B. ANALYSIS OF EXISTING AIR QUALITY

PSD regulations require an analysis of existing air quality for the impacts of those pollutant emissions which increase significantly from a proposed major source. CO is the pollutant of concern in this case. Note the increase in CO emissions is due to the Optimization Study and incorporation of the existing SU/SD emissions in the permit to identify, quantify, and limit them.

Dispersion modeling for the criteria pollutants indicated that there is no exceedance of NAAQS.

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

Modeling predicted compliance with the NAAQS for criteria pollutants.

D. PSD INCREMENT ANALYSIS

Modeling predicted compliance with the PSD increment for criteria pollutants.

E. SOURCE RELATED GROWTH IMPACTS

Source related growth impacts analysis is not required as no modification is being undertaken at the facility.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

The impact on soils and vegetation based on the EPA screening guidelines (EPA 450/2-81-078) is negligible.

G. CLASS I AREA IMPACTS

It can be safely inferred that there will not be any impact on the Class I area based on the previous analysis.

H. TOXIC IMPACT

There will not be any impact due to toxic emissions from the facility.

PRELIMINARY DETERMINATION SUMMARY

CHALMETTE REFINERY
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CHALMETTE, ST. BERNARD PARISH, LOUISIANA
PSD-LA-199(M-7), MAY 7, 2008

V. CONCLUSION

The Department of Environmental Quality - Office of Environmental Services has made a preliminary determination to approve the PSD permit modification for the Chalmette Refining, L.L.C., Chalmette Refinery, in Chalmette, St. Bernard Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

CHALMETTE REFINERY
AGENCY INTEREST NO. 1376
CHALMETTE REFINING, L.L.C.
CHALMETTE, ST. BERNARD PARISH, LOUISIANA
PSD-LA-199(M-7)

This permit is issued under the following conditions:

The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary," dated May 7, 2008, and subject to the emission limitations and other specific conditions of this permit. Specifications submitted are contained in the application and Emission Inventory Questionnaire (EIQ) dated December 18, 2007.

CHALMETTE REFINERY
AGENCY INTEREST NO. 1376
CHALMETTE REFINING, L.L.C.
CHALMETTE, ST. BERNARD PARISH, LOUISIANA
PSD-LA-199(M-7)

TABLE I: BACT COST SUMMARY

Control Alternatives for Process Heaters and Boilers		Availability/ Feasibility	Negative Impacts (a)	Control Efficiency %	Emissions Reduction (TPY)	Annualized Cost ($)	Cost Effectiveness ($/Ton)	Notes
NA*								

* Thermal De-NOx is an add on control device to reduce NOx emissions; CO emissions are a collateral increase.

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TABLE II: AIR QUALITY ANALYSIS SUMMARY ($\mu g/m^3$)

Pollutant	Averaging Period	Preliminary Screening Conc.	Significant Monitoring Conc.	Current Monitored Conc.	Level of Significant Impact	Maximum Modeled Conc.	Modeled + Background Conc.	NAAQS	Modeled PSD Increment Consumption	Allowable Class II PSD Increment
CO*	1-Hour	37.33	NR	NR	2000	NR	-	40000	NR	NR
	8-Hour	26.03	575	NR	500	NR	-	10000	NR	NR
NR = Not Required NAAQS = National Ambient Air Quality Standards										

* Based on significance modeling (Permit No. PSD-LA-199(M-6) dated December 11, 2007

CHALMETTE REFINERY
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TABLE III: COMPARISON BETWEEN OLD AND UPDATED EMISSION FACTORS		
EMISSION POINT/DESCRIPTION	CURRENT US EPA AP-42 FACTOR NOx/CO (lb/MM BTU)	PERMITTED PART 70 PERMITS AND PSD-LA-199(M-7) FACTOR NOx/CO (Avg. lb/MM BTU)
1, No. 1 Crude Heater (F-5)	0.2745/0.0824	0.1845/0.10
2, No. 1 Crude Heater (F-6)	0.2745/0.0824	0.1845/0.10
4, No. 1 Crude Vacuum Heater (F-1)	0.098/0.0824	0.1039/0.04
26, No. 1 Coker Heater (F-2800)	0.098/0.0824	0.117/0.04
37, No. 2 Crude Heater (F-7401)	0.049/0.0824	0.035/0.04
43, No.2 Crude Vacuum Heater (F-7601)	0.098/0.0824	0.0944/0.04
60, No. 2 Coker Heater (F-8101)	0.049/0.0824	0.05/0.04
65, No. Crude Gas Oil Heater (F-7410)	0.049/0.0824	0.05/0.04
39, HDS Heater (F-3300)	0.098/0.0824	0.1325/0.04
40, HDS Stripper Reboiler (F-3301)	0.098/0.0824	0.12275/0.04
46, SRU Train 1/2 Thermal Oxidizer (F-8003/8053)	0.068/0.37	0.6855/3.7555
50, Waste Gas Compressor No. 1	2.27/3.51	0.5/0.2
51, Waste Gas Compressor No. 2	2.27/3.51	0.5/0.2
52, Waste Gas Compressor No. 3	1.94/0.353	1.0/0.75

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CHALMETTE, ST. BERNARD PARISH, LOUISIANA
PSD-LA-199(M-7)

TABLE III: COMPARISON BETWEEN OLD AND UPDATED EMISSION FACTORS

EMISSION POINT/DESCRIPTION	CURRENT US EPA AP-42 FACTOR NOx/CO (lb/MM BTU)	PERMITTED PART 70 PERMITS AND PSD-LA-199(M-7) FACTOR NOx/CO (Avg. lb/MM BTU)
53, Waste Gas Compressor No. 4	2.27/3.51	0.5/1.0
27, Boiler No. 402	0.1667/0.0235	0.0561/0.1
35, Boiler No. 7 (F-806)	0.2745/0.0824	0.419/0.15
7, Ortho Rerun Reboiler (F-1500)	0.098/0.0824	0.108/0.04
9, No. 3 Ortho Reboiler (F-1600)	0.098/0.0824	0.1068/0.04
11, No. 1 Hot Oil Heater (F-1201)	0.2745/0.0824	0.1689/0.04
14, No. 2 Hot Oil Heater (F-1105)	0.2745/0.0824	0.1597/0.04
16, Prefractionator Reboiler (F1106)	0.098/0.0824	0.1008/0.04
56, ISOM Recycle Compressor 1/2	0.098/3.51	0.5/0.6
17A/B, ISOM Heater (F-600)	0.098/0.0824	0.1524/0.04
85A, TDU Detol Reboiler (F-4201)	0.049/0.0824	0.055/0.04
85B, TDU Heater (F-4202)	0.049/0.0824	0.0594/0.04
85C, TDU Preheater (F-4203)	0.049/0.0824	0.0464/0.04
8A/B, No. 2 Ortho Reboiler (F-3001)	0.2745/0.0824	0.1799/0.04
41, No. 1 Reformer Heaters (F-7501-7)	0.1863/0.0824	0.2529/0.04
44, CFHT Reactor Heater (F-7701)	0.098/0.0824	0.1951/0.04

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PSD-LA-199(M-7)

TABLE III: COMPARISON BETWEEN OLD AND UPDATED EMISSION FACTORS		
EMISSION POINT/DESCRIPTION	CURRENT US EPA AP-42 FACTOR NOx/CO (lb/MM BTU)	PERMITTED PART 70 PERMITS AND PSD-LA-199(M-7) FACTOR NOx/CO (Avg. lb/MM BTU)
61, CFHT Fract. Reboiler (F-7702)	0.098/0.0824	0.2263/0.04
45, FCC Heater (F-7801)	0.098/0.0824	0.1838/0.04
47, FCC Regenerator Flue Gas Scrubber Vent	NA	
48, FCC Regen. Aux. Burner (F-7802)	0.098/0.0824	2.2222/1.2996
49, Alky Isostripper Reboiler (F-7901)	0.098/0.0824	0.0864/0.04
28, No. 1 Flare (Candelabra)	0.068/0.37	0.07/0.3829
29, No. 2 Flare (Pencil)	0.068/0.37	0.0677/0.3689
20, No. Hot Oil Heater (F-2506)	0.2745/0.0824	0.1386/0.04
21, No. 3 Pretreater Heater (F-2504)	0.098/0.0824	0.1548/0.04
22, No. 3 Pretreater Reboiler (F-2505)	0.098/0.0824	0.1352/0.04
24, Hydrocracker Splitter Reboiler (F-2304)	0.098/0.0824	0.1068/0.04
38, No. 3 Reformer Rx 3 Preheater (F-2503)	0.098/0.0824	0.1709/0.04
19A, No. 3 Reformer Rx 1 Preheater (F-2501)	0.2745/0.0824	0.1956/0.04

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CHALMETTE, ST. BERNARD PARISH, LOUISIANA
***PSD-LA-199*(M-7)**

TABLE III: COMPARISON BETWEEN OLD AND UPDATED EMISSION FACTORS		
EMISSION POINT/DESCRIPTION	CURRENT US EPA AP-42 FACTOR NOx/CO (lb/MM BTU)	PERMITTED PART 70 PERMITS AND PSD-LA-199(M-7) FACTOR NOx/CO (Avg. lb/MM BTU)
19B, No. 3 Reformer Rx 2 Preheater (F-2502)	0.2745/0.0824	0.1851/0.04
23C, Hydrocracker 1st/2nd Stage Rx Preheater (F-2301/2302)	0.098/0.0824	0.1273/0.04
23D, Hydrocracker 1st/2nd Stage Rx Preheater (F-2307/2308)	0.098/0.0824	0.1273/0.04
25A/B, Hydrocracker Stabilizer Reboiler (F-2303)	0.098/0.0824	0.1529/0.04

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TABLE IV: SUMMARY OF PROPOSED BACT

Source Description	Pollutant	Most Feasible BACT Selected
FCCU	CO	Good Combustion Practices along with Full-Burn Mode 300 ppmv at 0% oxygen on a 365-day rolling average 500 ppmv at 0% oxygen on a one hour average

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates													
			PM/PM_{10}		SO_2		NO_X		CO		VOC		H_2S		H_2SO_4	
			Lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
EQT065	1	175					34.99	□□□.	35.00	68.80						
EQT067	2	175					34.99	126.90	35.00	68.80						
EQT068	4	90					12.90	25.90	7.42	10.00						
EQT069	26	77					11.96	26.80	6.35	9.10						
EQT028	37	210					10.50	29.13	17.30	33.29						
EQT029	43	110					12.62	34.72	9.06	14.72						
EQT030	60	210					15.75	43.80	17.30	35.04						
EQT031	65	185					13.88	37.23	15.24	29.78						
EQT191	39	83					15.47	29.59	6.84	8.94						
EQT192	40	64					10.93	21.52	5.27	7.01						
EQT193	46	60					44.70	60.04	217.74	328.97						
EQT194	50	4					4.00	6.57	2.40	2.63						
EQT195	51	4					4.00	6.57	2.40	2.63						
EQT196	52	8					16.00	21.90	12.00	16.43						
EQT197	53	11					11.00	21.90	22.00	43.80						
EQT019	27	380					125.40	CAP	76.00	CAP						
EQT020	35	160					93.26	137.64	48.00	49.28						
EQT204	7	51					8.71	12.30	4.20	4.56						
EQT206	9	132					22.55	21.98	10.88	8.23						
EQT207	11	160					29.82	103.57	13.18	24.53						
EQT208	14	173					32.24	97.94	14.26	24.53						

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			PM/PM_{10}		SO_2		NO_X		CO		VOC		H_2S		H_2SO_4	
			Lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
EQT209	16	47					7.30	11.04	3.87	4.38						
EQT211	56	5					10.00	9.64	10.00	11.56						
EQT210	17A/B	70					13.05	35.39	5.77	9.29						
EQT212	85A	86					5.80	15.67	7.09	11.39						
EQT213	85B	44					2.97	9.62	3.63	6.48						
EQT214	85C	41					2.76	4.88	3.38	4.21						
EQT205	8A/B	182					43.49	96.11	15.00	21.37						
EQT057	41	417					130.62	343.45	34.36	54.31						
EQT059	44	70					17.62	41.86	5.77	8.58						
EQT060	61	52					13.09	44.60	4.29	7.88						
EQT183	45	70					15.14	45.08	5.77	9.81						
EQT184	47	625,000 lb/hr					246.70	160.50	300.25	732.80						
EQT185	48	55					9.37	2.24	11.00	1.31						
EQT186	49	134					15.37	34.08	11.04	15.77						
EQT254	28	1885					1.27	2.16	6.90	11.75						
EQT255	29	2075					141.01	43.95	767.27	239.13						
EQT243	20	190					35.41	75.90	15.66	21.90						
EQT244	21	31					5.78	16.30	2.55	4.20						
EQT245	22	41					7.64	15.40	3.38	4.56						
EQT248	24	51					8.71	11.70	4.20	4.38						
EQT250	38	84					17.10	49.40	6.92	11.56						

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates													
			PM/PM_{10}		SO_2		NO_X		CO		VOC		H_2S		H_2SO_4	
			Lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
EQT241	19A	173					35.22	140.50	14.26	28.73						
EQT242	19B	173					35.22	123.20	14.26	26.63						
EQT246	23C	46					8.57	13.39	3.79	4.20						
EQT247	23D	46					8.57	13.39	3.79	4.20						
EQT249	25A/B	92					17.15	46.90	7.58	12.26						

TABLE VI: COMPLIANCE TEST REQUIREMENTS				
Emission Point	**Control Devices / Work Practices**	**Test Method**	**Criteria Being Tested**	**Notes**
EQT019, 020, 028, 029, 030, 031, 057, 059, 060, 065, 067, 183, 186, 193, 197, 205, 207, 208, 210, 241, 242, 243, 249, and 250 See note below		40 CFR 60, Appendix A, Method 1-4 40 CFR 60, Appendix A, Method 7E 40 CFR 60, Appendix A, Method 10 40 CFR 60, Appendix F	Stack parameters Nitrogen oxide CO	CEM for NO_X and O_2 (where applicable) CEM for CO and O_2 (where applicable)
EQT184	CEM	40 CFR 60, Appendix A, Method 1-4 40 CFR 60, Appendix A, Method 7E 40 CFR 60, Appendix A, Method 10 40 CFR 60, Appendix F	Stack parameters Nitrogen oxide CO	CEM for NO_X and O_2 CEM for CO and O_2

Note: If the combustion devices are identical, test 50% of them. If the 50% result is a fraction, round it off to the next numerical digit. If the facility is testing the combustion devices under the Part 70 permit requirements then the equipment will not have to be retested pursuant to the requirements of this permit.

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LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS

I. This permit is issued on the basis of the emissions reported in the application for approval of emissions and in no way guarantees that the design scheme presented will be capable of controlling the emissions to the type and quantities stated. Failure to install, properly operate and/or maintain all proposed control measures and/or equipment as specified in the application and supplemental information shall be considered a violation of the permit and LAC 33:III.501. If the emissions are determined to be greater than those allowed by the permit (e.g. during the shakedown period for new or modified equipment) or if proposed control measures and/or equipment are not installed or do not perform according to design efficiency, an application to modify the permit must be submitted. All terms and conditions of this permit shall remain in effect unless and until revised by the permitting authority.

II. The permittee is subject to all applicable provisions of the Louisiana Air Quality Regulations. Violation of the terms and conditions of the permit constitutes a violation of these regulations.

III. The Emission Rates for Criteria Pollutants, Emission Rates for TAP/HAP & Other Pollutants, and Specific Requirements sections or, where included, Emission Inventory Questionnaire sheets establish the emission limitations and are a part of the permit. Any operating limitations are noted in the Specific Requirements or, where included, Tables 2 and 3 of the permit. The synopsis is based on the application and Emission Inventory Questionnaire dated December 18, 2007; as well as additional information as of May 9, 2008.

IV. This permit shall become invalid, for the sources not constructed, if:

A. Construction is not commenced, or binding agreements or contractual obligations to undertake a program of construction of the project are not entered into, within two (2) years (18 months for PSD permits) after issuance of this permit, or;

B. If construction is discontinued for a period of two (2) years (18 months for PSD permits) or more.

The administrative authority may extend this time period upon a satisfactory showing that an extension is justified.

This provision does not apply to the time period between construction of the approved phases of a phased construction project. However, each phase must commence construction within two (2) years (18 months for PSD permits) of its projected and approved commencement date.

V. The permittee shall submit semiannual reports of progress outlining the status of construction, noting any design changes, modifications or alterations in the construction schedule which have or may have an effect on the emission rates or ambient air quality levels. These reports shall continue to be submitted until such time as construction is certified as being complete. Furthermore, for any significant change in the design, prior approval shall be obtained from the Office of Environmental Services, Air Permits Division.

VI. The permittee shall notify the Department of Environmental Quality, Office of Environmental Services, Air Permits Division within ten (10) calendar days from the date that construction is certified as complete and the estimated date of start-up of operation. The appropriate Regional Office shall also be so notified within the same time frame.

LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS

VII. Any emissions testing performed for purposes of demonstrating compliance with the limitations set forth in paragraph III shall be conducted in accordance with the methods described in the Specific Conditions and, where included, Tables 1, 2, 3, 4, and 5 of this permit. Any deviation from or modification of the methods used for testing shall have prior approval from the Office of Environmental Assessment, Air Quality Assessment Division.

VIII. The emission testing described in paragraph VII above, or established in the specific conditions of this permit, shall be conducted within sixty (60) days after achieving normal production rate or after the end of the shakedown period, but in no event later than 180 days after initial start-up (or restart-up after modification). The Office of Environmental Assessment, Air Quality Assessment Division shall be notified at least (30) days prior to testing and shall be given the opportunity to conduct a pretest meeting and observe the emission testing. The test results shall be submitted to the Air Quality Assessment Division within sixty (60) days after the complete testing. As required by LAC 33:III.913, the permittee shall provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits.

IX. The permittee shall, within 180 days after start-up and shakedown of each project or unit, report to the Office of Environmental Compliance, Enforcement Division any significant difference in operating emission rates as compared to those limitations specified in paragraph III. This report shall also include, but not be limited to, malfunctions and upsets. A permit modification shall be submitted, if necessary, as required in Condition I.

X. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of at least five (5) years.

XI. If for any reason the permittee does not comply with, or will not be able to comply with, the emission limitations specified in this permit, the permittee shall provide the Office of Environmental Compliance, Enforcement Division with a written report as specified below.

A. A written report shall be submitted within 7 days of any emission in excess of permit requirements by an amount greater than the Reportable Quantity established for that pollutant in LAC 33.I.Chapter 39.

B. A written report shall be submitted within 7 days of the initial occurrence of any emission in excess of permit requirements, regardless of the amount, where such emission occurs over a period of seven days or longer.

C. A written report shall be submitted quarterly to address all emission limitation exceedances not included in paragraphs A or B above. The schedule for submittal of quarterly reports shall be no later than the dates specified below for any emission limitation exceedances occurring during the corresponding specified calendar quarter:

1. Report by June 30 to cover January through March
2. Report by September 30 to cover April through June
3. Report by December 31 to cover July through September
4. Report by March 31 to cover October through December

LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS

D. Each report submitted in accordance with this condition shall contain the following information:

1. Description of noncomplying emission(s);
2. Cause of noncompliance;
3. Anticipated time the noncompliance is expected to continue, or if corrected, the duration of the period of noncompliance;
4. Steps taken by the permittee to reduce and eliminate the noncomplying emissions; and
5. Steps taken by the permittee to prevent recurrences of the noncomplying emissions.

E. Any written report submitted in advance of the timeframes specified above, in accordance with an applicable regulation, may serve to meet the reporting requirements of this condition provided all information specified above is included. For Part 70 sources, reports submitted in accordance with Part 70 General Condition R shall serve to meet the requirements of this condition provided all specified information is included. Reporting under this condition does not relieve the permittee from the reporting requirements of any applicable regulation, including LAC 33.I.Chapter 39, LAC 33.III.Chapter 9, and LAC 33.III.5107.

XII. Permittee shall allow the authorized officers and employees of the Department of Environmental Quality, at all reasonable times and upon presentation of identification, to:

A. Enter upon the permittee's premises where regulated facilities are located, regulated activities are conducted or where records required under this permit are kept;

B. Have access to and copy any records that are required to be kept under the terms and conditions of this permit, the Louisiana Air Quality Regulations, or the Act;

C. Inspect any facilities, equipment (including monitoring methods and an operation and maintenance inspection), or operations regulated under this permit; and

D. Sample or monitor, for the purpose of assuring compliance with this permit or as otherwise authorized by the Act or regulations adopted thereunder, any substances or parameters at any location.

XIII. If samples are taken under Section XII.D. above, the officer or employee obtaining such samples shall give the owner, operator or agent in charge a receipt describing the sample obtained. If requested prior to leaving the premises, a portion of each sample equal in volume or weight to the portion retained shall be given to the owner, operator or agent in charge. If an analysis is made of such samples, a copy of the analysis shall be furnished promptly to the owner, operator or agency in charge.

XIV. The permittee shall allow authorized officers and employees of the Department of Environmental Quality, upon presentation of identification, to enter upon the permittee's premises to investigate potential or alleged violations of the Act or the rules and regulations adopted thereunder. In such investigations, the permittee shall be notified at the time entrance is requested of the nature of the suspected violation. Inspections under this subsection shall be limited to the aspects of alleged violations. However, this shall not in any way preclude prosecution of all violations found.

LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS

XV. The permittee shall comply with the reporting requirements specified under LAC 33:III.919 as well as notification requirements specified under LAC 33:III.927.

XVI. In the event of any change in ownership of the source described in this permit, the permittee and the succeeding owner shall notify the Office of Environmental Services in accordance with LAC 33:I.Chapter 19.Facility Name and Ownership/Operator Changes Process.

XVII. Very small emissions to the air resulting from routine operations, that are predictable, expected, periodic, and quantifiable and that are submitted by the permitted facility and approved by the Air Permits Division are considered authorized discharges. Approved activities are noted in the General Condition XVII Activities List of this permit. To be approved as an authorized discharge, these very small releases must:

1. Generally be less than 5 TPY
2. Be less than the minimum emission rate (MER)
3. Be scheduled daily, weekly, monthly, etc., or
4. Be necessary prior to plant startup or after shutdown [line or compressor pressuring/depressuring for example]

These releases are not included in the permit totals because they are small and will have an insignificant impact on air quality. This general condition does not authorize the maintenance of a nuisance, or a danger to public health and safety. The permitted facility must comply with all applicable requirements, including release reporting under LAC 33:I.3901.

XVIII. Provisions of this permit may be appealed in writing pursuant to La. R.S. 30:2024(A) within 30 days from receipt of the permit. Only those provisions specifically appealed will be suspended by a request for hearing, unless the secretary or the assistant secretary elects to suspend other provisions as well. Construction cannot proceed except as specifically approved by the secretary or assistant secretary. A request for hearing must be sent to the following:

Attention: Office of the Secretary, Legal Services Division
La. Dept. of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302

XIX. For Part 70 sources, certain Part 70 general conditions may duplicate or conflict with state general conditions. To the extent that any Part 70 conditions conflict with state general conditions, then the Part 70 general conditions control. To the extent that any Part 70 general conditions duplicate any state general conditions, then such state and Part 70 provisions will be enforced as if there is only one condition rather than two conditions.